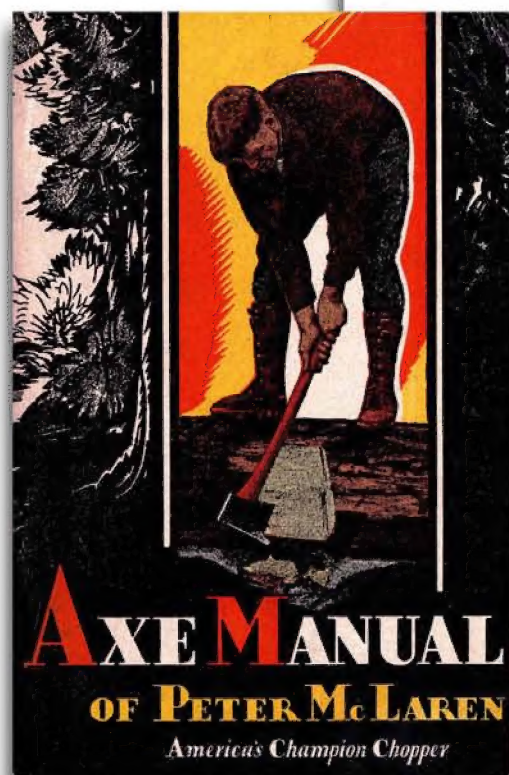


M AXE MANUAL OF PETER Mc LAREN

AMERICA'S CHAMPION CHOPPER



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CHAPTER II

How to Sharpen and Care for Your Axe

Getting the Axe in Shape.—The style, grind and weight of an axe depend upon a number of factors: A narrow axe with a thin blade is best for hard woods; a wide axe with a thicker blade for soft woods. Weight, of course, depends upon the size, strength, or skill of the user.

Thus there are varying patterns for different sections of the country—patterns that are dictated by local preference.

So it is difficult for the axe maker to produce an axe to satisfy every individual user.

If your axe is not ground correctly to suit your preference, or the work you have to do, use a wet grindstone, with plenty of water, to get it into shape.

Grind the blade of the axe flat to the required thinness on both sides, but not too thin or the axe will break. Start your grind about 3" back from the cutting edge, and work for a fan-shaped effect as shown in Figure 5. Carry this grinding down to within one-half inch of the edge; then roll off a bevel, making it a gradual taper from a point half an inch from the edge down



Fig. 5.— Fan grind, the best way. See the file marks running back towards the head.

to the cutting edge. Such a bevel throws the chip and prevents breakage in the blade.

After you have gotten your axe in shape the first time, the grindstone need never be used again.



Fig. 6.—The Plumb All-Work File, with a coarse edge for fast cutting, and a smooth edge for finishing.

Use a file to keep it sharp, and down to the required thinness.

Type of File to Use.—For this purpose, the ideal file is a flat file with a coarse, fast-cutting edge on one side, and smooth side for finishing. I recommend the Plumb All-work File illustrated in Figure 6 for this purpose.

Using the File.—Hold the file level with the blade of the axe as shown in Figure 7, and begin filing the flat of the blade at the top of the roll, or one-half inch from the edge. From this point file away the flat of the blade to a point about three inches back from the edge.

Work for the fan-shaped effect shown in Figure 5, as this style of grind is serviceable in practically all kinds of wood.

Use the double-cut, or fast-cutting, side of the All-work File for this purpose, and stroke from the edge back toward the head of the axe. File only on the



Fig. 7.—Hold the file level with the axe blade. Note the peg driven into the ground to hold the axe for sharpening.

forward stroke, lifting the file clear of the axe on the return stroke.

Do not file the flat of the blade farther back than the three inches mentioned, or your axe will stick in the wood, or the vibration will break it, as it has no support against the sides of the cut.

Now file the bevel, using the single cut, or smooth, side of the file. Start filing at a point one-half an inch from the edge, and roll the bevel down to the edge, always sending your file strokes toward the head of the axe.

After filing the bevel go over the flat of the blade with the smooth side of your file to remove any coarse scratches.

Now reverse your axe and proceed in the same manner with the other side.

Each time you file your axe, start back on the flat of the axe as explained, before you file the bevel. Thus you keep the same proportionate thinness of bevel and blade. If you merely file the bevel, your blade will soon be stubby, and the axe will not sink in the wood.

Holding the Axe for Filing.—

Drive a peg into the ground and rest the blade of the axe upon it, to file a single bit axe in the woods. See Figure 7. Or cut a notch in a stump and drive the head of the

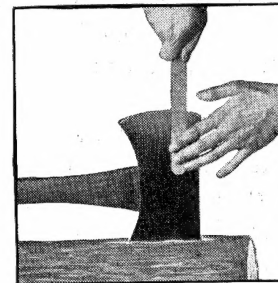


Fig. 9.—A double bit axe can be held securely by driving it into a log.

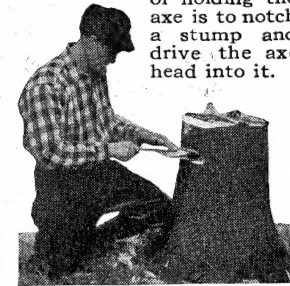


Fig. 8.—Another method of holding the axe is to notch a stump and drive the axe head into it.

axe in, so that it is held securely, as shown in Figure 8.

A double bit axe can be held firmly by driving it into a log as illustrated in Figure 9.

Honing

After each sharpening, and every time you are about to use the axe, hone it. Most men never hone an axe. If they realized the difference it would make, they would know that the few minutes spent are made up many times over in time- and strength-saving.

A hard, fine grit stone is best for this purpose. Hold

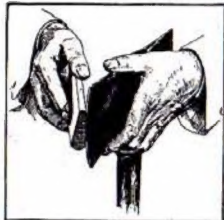


Fig. 11.—Correct angle of stone and axe blade.



Fig. 12.—Hone with a circular motion of the stone.

the head of the axe as shown in Figure 10. Rub the stone over the axe edge from heel to toe with a revolving motion, leaning the stone forward slightly. See Figure 11 and Figure 12.

Then turn the axe to position shown in Figure 13 and repeat the revolving motion from toe to heel on the opposite side of the blade.

The first operation turns the burr, or wire edge, to the far side, and when you reverse the axe, the stone cuts it off, provided it travels across the blade in the opposite direction.

A honed axe will cut fast and stay sharp, while an edge with the burr



Fig. 10.—First position for honing the edge after sharpening.

Fig. 13.—This is the second position for honing. Do not release the axe, but merely reverse your wrist dropping the axe handle down. This brings the opposite edge into position for honing.



left on will flatten out, slow you up, and induce crumbling along the cutting edge.

Pointers on Axe Sharpening

Grind your axe slowly. On a grindstone, use plenty of water.

Never grind an axe on an emery wheel or dry stone. This destroys its temper.

Always hone your axe before using and increase your chopping speed.

If no grindstone is available to get your axe into shape the first time, a file may be used, in the same way as described herein.

Always work for a fan-shaped effect on the blade of the axe as shown in Figure 5. An incorrect method is illustrated in Figure 14 where the bevel is too steep and the file has been run across the blade, instead of back toward the head.



Fig. 14.—Incorrect grind. Too steep a bevel and file marks run along the edge of the blade.

If you have a double-bit axe, keep one blade thicker for rough work and the other thin for clean, fast cutting.

Refitting the Handle

Kipling, in his *Pucks Tales*, tells how the ancient British wolf was cunning enough to attack the shepherd and his flock only on wet days when the thongs that bound the shepherd's stone axe to the handle were soaked with rain, and the axe was ready to fly from the handle at the first blow.

Keeping an axe handle tight has always been a problem.

No matter how tightly a handle may be wedged at the factory, after it has been in use a while, chopping and shrinkage will loosen it.

In a damp place an axe handle will stay tight longer than in a warm, dry place. Sometimes soaking the axe in a bucket of water will take up a slight shrinkage. But this is only a temporary measure.

Plumb Axes, which I use exclusively, are equipped with patent screw wedges which take up average shrinkage in a handle.

First, drive up the handle tightly. To do this, without splitting the end of the handle, cut about one inch off the fawn foot so that you will have a flat surface for driving the handle in. See Figure 15. This does not impair your axe as the fawn foot is for appearance only.

Then just turn the screw wedges with a screw-driver and your handle is tight again.

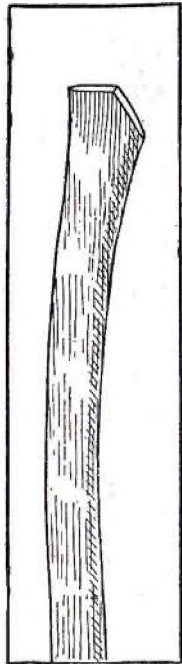


Fig. 15.—Cut off the end of the handle to obtain a flat surface for driving the handle up.

Eventually, of course, you will need to rewedge the handle. Take this opportunity to give your axe an overhauling.

Pick out the wedge and drive off the handle. If the wood of the handle does not bear against the axe eye at all points, shave the handle until it fits snugly.

If the hang does not suit you, now is the time to correct it. The hang of an axe is a matter of preference. It varies in different patterns. I prefer a hang where, when the end of a thirty-six inch handle touches a level surface, the cutting edge rests on a parallel surface, one-third from the heel of the axe blade.

Hang the blade to suit you. The one precaution you must take is to be sure that when you sight along the blade that the edge is in a direct line with the center of the handle. See Figure 16.

Now drive in your new wedge as shown in Figure 17. I always use a long wooden wedge, well dried out.

Iron wedges have many drawbacks. They are of a set size, and if too short, or too long, or too thick cannot be whittled to shape. The weight of an iron wedge can change the balance, or fall, of an axe. An iron wedge comes out more easily in use. Altogether I have found that wood is far superior.

After your wedge is driven in tightly, cut off the surplus wood,



Fig. 16.—In a correctly hung axe, the cutting edge is in a direct line with the center of the handle.

bore two holes for the screw wedges with a gimlet and screw them into place.

Your axe is now ready for use, and the screw wedges will take up the normal shrinkage for a long time.



Fig. 17.—Drive in tightly a long wedge of well-seasoned wood. Then cut off the surplus wood and restore the Take-Up Wedges.

CHAPTER III

How to Use an Axe

I know of no tool that is more abused in use than the axe. The popular conception of chopping seems to be that you take an axe and hit at the wood.

Chopping is an art. Only years of practice bring expertness. Yet there are certain fundamentals of axe use which can be readily grasped by any man. Frequently a knowledge of them will reduce his chopping time by half; always, they will save his strength and speed his work.

It is these primary principles which I treat of in this chapter.

The Proper Grip.—Look at Figure 18. I am standing upon a log with the axe in a horizontal position. Note the position of hands: The left hand about three inches from the end of handle; the right hand about three quarters of the way up the handle.

Now look at Figure 19. I have brought my left arm forward. The right arm is drawn back, and the axe head has traveled in a half circle along my right side and up the back. This is the top, or beginning of the stroke. The hands are still in the same position.

Keep your head down and your eyes on the cut. Aim your blow, and bring the axe down with a natural, swinging motion, sliding your right hand down the handle as the axe descends. At the end of your swing the hands should be together as shown in Figure 20.

Only the right hand slides; the left hand retains a firm grip in its original position.

Now, free the axe and return to Top of Stroke position, sliding the right hand back up the handle to its proper place.

Never raise the axe straight in front of you. Always swing the axe head with a natural circular motion along, and to the rear of, your right side.



Fig. 18.—Take a firm stance on the log and grip the axe as shown.



Fig. 19.—Position of hands and axe at Top of Stroke. Note that the head is down—eyes on the cut.

Practice these swings, giving particular attention to the position of your hands, until you acquire the knack.

Position on Log.—Always stand on top of any log that will give you a foothold. If the surface is smooth, roughen it with your axe to secure a firm foothold.

Chop between your feet. Figure 19 illustrates the correct spread of legs, and the position of feet in relation to cut you are making.

Correct Angle for Chopping.—Do not drive the axe straight in. Cut on an angle; usually about a 50-degree angle from the edge of the log.

Many axe users fail to start their cut wide enough, and before they reach the center of the log, they are cutting in a tight angle and have to recut a wider notch.

The width of the cut varies with

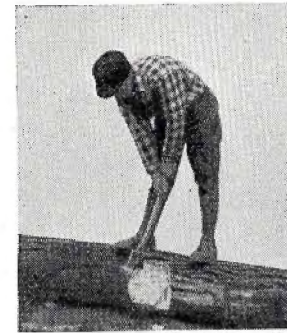


Fig. 20.—Hands are together at completion of stroke. Note that axe strikes upper side of log.

the size of the log. On a log one foot in diameter, start your cut ten inches wide. On bigger logs, this width decreases, so that a twenty-four inch log would need only about a nineteen-inch cut.

Cutting a Log.—Let us assume that you have a twelve-inch log to cut. You are standing on top of it ready to begin. You will start the cut ten inches wide and chop towards the center at an angle from both sides, so that

when the angles meet you will be exactly half-way through the log.

This type of cut is called the Flying Cut. Two different axe strokes are used;

First—The Forehand Stroke.—This is illustrated in Figure 19. Note carefully the position of legs, hips, and arms. The completion of this stroke is shown in Figure 20.

Your first series of strokes on the log will be delivered with the forehand stroke. The first stroke should strike the top side as shown in Figure 20 with a portion of the blade protruding *above* the cut. The second stroke should strike near the bottom side of the log as shown in Figure 21, with a portion of the blade protruding *below* the cut. By keeping a portion of the blade always in the clear, the blade



Fig. 21.—Second stroke should place the axe in the lower side of log as shown.

will not stick as readily as when the whole edge of the axe is in solid wood.

The third stroke should strike the center of the log as shown in Figure 22. Give the blade a twist as it imbeds itself in the wood in order to loosen the chip.

The Backhand Stroke.—The next series of strokes will be delivered from the other angle. This is called the *Backhand Stroke*, and is illustrated in Figure 23. Notice how the whole body faces in a different direction in order to bring the axe into line with the other face of your V-shaped cut, with the head still down and the eyes on the cut.

Deliver your series of strokes in the same manner: Top cut first; bottom cut second; middle cut last, with a twist of the blade to throw out the chip.

Now go back to the Forehand Stroke for three more strokes on the other face of your cut; then the Backhand again, and continue alternating in series until you are half-way through the log.

Then turn around and proceed in the same way on the other side of the log, and chop until the log is cut in two.

The important thing to remember is to chop with a series of strokes. Top; bottom; middle. This lifts out the chips at the top and bottom of your cut first,



Fig. 22.—Third stroke places the axe in the middle of log and throws out the chip.



Fig. 23.—Top position for Backhand Stroke, bringing axe into line with other face of V-shaped cut.

leaving the middle chip till last, so that the axe does not stick in solid wood. Also, your axe is following the grain and growth rings, making easier cutting.

On a bigger log the principle is the same: Top first; bottom second; except that you may need two, or even three strokes, to clear the middle chip, instead of one.

Various Types of Cuts

The Flying Cut, just described, is the customary cut for a fallen log. The most popular cuts, each having its own particular advantages, are illustrated and described in Figure 24.

1. Flying Cut, customarily used in cutting fallen logs.
2. Broken Chip. This is simply a larger Flying Cut, used where the log is too large for the axe to throw out the chip with a single V-shaped cut. A smaller V is cut first, and the chip broken down from one side of it.
3. This is the Double Break. It is also used on large logs where a wide V-shaped cut is required. A smaller V is cut first, and the chips then broken from both sides.

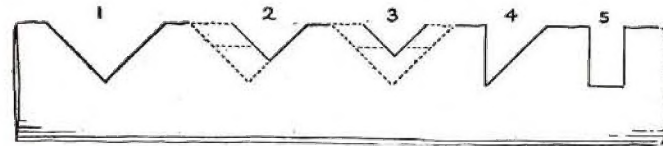


Fig. 24.—Various types of cuts for chopping trees or fallen logs.

4. **Box Cut.** This is used in cutting down trees or where one end of a fallen log is to be squared.
5. **Double Box Cut.** This is used where square ends are required on both sides of a cut.

How to Split

There are many ways of splitting logs. If there is much splitting to do, the best equipment is a maul and iron wedges. But the man with an occasional log to split, can do it easily and quickly with two axes. This method is shown in Figure 25.

Study the grain of the wood, so that you split with the grain. Drive your first axe into the end of the log. Then drive the second axe in above it with the handle pointing in the opposite direction. The second axe loosens the first one. Drive the first axe in a few inches further along the cut. This will loosen the second axe. Continue progressing up the log in this



Fig. 25.—Splitting a log with two axes. One axe loosens the other as the chopper progresses up the log.

way, freeing one axe with the other, until the log is split.

Or one axe and a wooden wedge can be used as shown in Figure 26. Start the cut with an axe. Free it and drive in wedge. Continue along the log until split.

Small logs, of course, can be split with one axe.

In splitting with an axe, always give the axe a twisting motion to spread the cut and keep the axe from sticking.

Hewing to the Line.—When a square side is wanted on a round log, remove the bark first. Use a “chalk-line” to make a straight line down the length of the log.

Take an ordinary string or line and blacken it with charcoal or charred wood. Fasten it at one end of the log by nicking the wood with an axe and inserting the line. Carry the loose end of the line to the other end of the log, and sight along it until the string lays along the top of the log in a straight line. Nick the log and fasten the line at this end in the same way.

Now lift the line at the center of the log, as you would distend the string of a bow. Release it and let it fly back. Now remove the line, and you will have a straight, black line upon the surface of the log.

Then with an axe, cut a series of notches into the side of the log, stopping each at your marked line, as shown in Figure 27. Then start from the end of the log and true it up by trimming off the surplus wood along your line.



Fig. 26.—Splitting a log with an axe and wooden wedge.

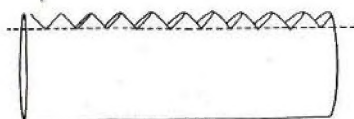


Fig. 27.—Notches cut into the side of a log to a straight line, and then trimmed off, give a square side.

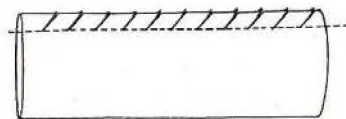


Fig. 28.—The same result can be secured by expert choppers with a series of gashes as illustrated.

Expert choppers often accomplish the same result by cutting a series of gashes, instead of notches, as shown in Figure 28. The surplus wood is then trimmed off along the "chalk-line" in the same way.

Splitting Large Stakes.—In splitting large stakes along their length, place the stake against a log or some standing object and hold the lower end firmly to the ground with your foot. Strike the upper end, twisting the blade as it enters the wood. This twist opens the cut and at the same time prevents the axe from cutting through the entire length of the stake and possibly striking your foot.

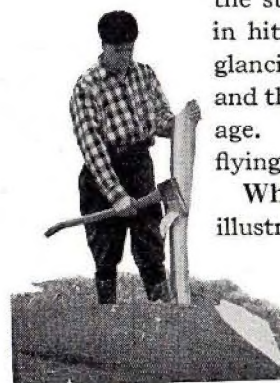


Fig. 29.—Proper grip on axe for whittling large stakes.

There is far less danger of striking your foot when the stake is held firmly, than there is in hitting at a free stake. It is the glancing blow, when the stake wobbles, and the axe skids off, that does the damage. There is also the risk of the stake flying up, when not held with the foot.

Whittling Large Stakes.—Figure 29 illustrates the proper method. The axe is held about six inches from the head.

Pointing Small Stakes.—Hold the axe right up against the head and *push* the blade with a circular shearing motion,

instead of an up-and-down stroke. See Figure 30.

A light, one-hand axe, of course, is preferable for whittling or pointing.

Cutting to Firewood Length.—

There are several different methods to cut stakes into firewood lengths. I have illustrated in Figure 31 the method I find to be the easiest and safest.

The stake is placed so that the point where the axe is to strike is supported by solid wood. Drive your axe at an angle as shown in the illustration,

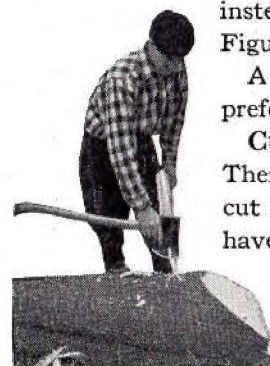


Fig. 30.—Proper grip for pointing small stakes. Blade is pushed with a circular shearing motion.

and as the blade cuts into the wood, tilt the axe head sharply so that it pins down the small piece which you have cut.

Pointers on Chopping

Never chop through a knot if you can chop around it. It makes chopping hard, and you are likely to damage your axe. Figure 32 shows how a knot can be avoided in cutting.

Do not strike the ground with your axe. Dirt and stones will quickly dull and nick an edge.

When lopping off branches, never cut into the crotch, but from the under side as shown in Figure 33. It is easier on the axe because you are cutting



Fig. 31.—The safe way to cut firewood. Stake is supported on solid wood. Axe head pins down small piece as it is cut.

Fig. 32.—Avoiding a knot by chopping around it saves the axe and makes chopping easier.



with the grain, and it leaves the trunk smooth.

Warm your axe. A cold axe is brittle and easily chipped or cracked. If you have no ready means of taking the chill out of the steel, chop slowly for a few minutes to warm it up.



Fig. 33.—Lopping branches from the underside saves the axe, and leaves a smooth trunk. Never cut into the crotch.

CHAPTER IV

Felling a Tree

A tree can be hacked down in a haphazard, laborious fashion, or it can be dropped, easily and quickly—exactly where you want it to go.

The methods described in this chapter have been tested by a quarter-century of experience. They should prove invaluable to any man who uses an axe.

In order to demonstrate clearly the technique of using an axe to fell a tree, the photographs illustrating this chapter have been taken in a natural standing pose.

In actual practice, chopping in this position is not advisable as too high a stump is left standing. Much valuable timber is wasted by cutting a tree higher above the ground than is absolutely necessary.

Determining the Lean of a Tree.—Practically every tree has a natural *lean*, and will fall in the direction of this lean unless guided by the chopper.

Always determine the direction of this lean before commencing to chop. Do this by standing a few yards away from it and holding the axe up loosely by the

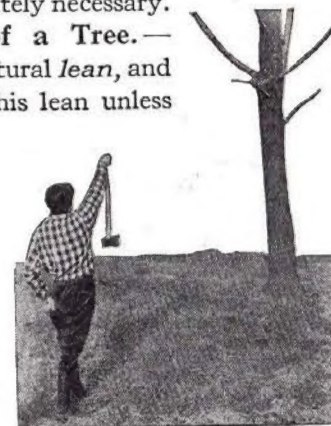


Fig. 34.—Determining the lean of a tree before chopping, by using the axe as a plumb line.

end of the handle, with the head down. See Figure 34.

When the blade is pointed directly at the tree trunk, the handle becomes a plumb line, or straight edge, along which you can sight to find which way the tree is leaning.

When you find where the tree would normally drop, decide where you want to drop it. You can do this at any spot within a quarter-circle on either side of the spot where its natural lean would take it. Figure 35 illustrates this.

Pick the place you want the tree to drop, taking the wind into consideration, as a falling tree will naturally carry in the direction of the wind, particularly if it has heavy foliage.

Choose a clear spot to drop it; or if you must crash it into another tree, pick a dead one.

You are now ready to chop. The first step is to make a Box Cut directly facing the spot where tree is to fall. In Figure 36, for instance, the tree will topple in the direction shown, because the Box Cut faces in that direction.

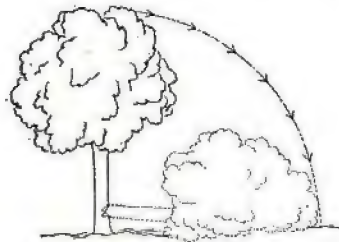


Fig. 36.—The front box cut determines where a tree will drop.

Depth and Angle of Cut.—On a tree twelve inches in diameter, take six inches on the face of the tree, i. e., your Box Cut, from top

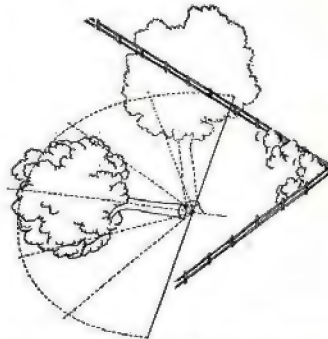


Fig. 35.—A tree can be dropped within a quarter-circle on either side of the spot where it would naturally drop.

to bottom should measure six inches. Chop half way through the tree, or to a depth of six inches. The bottom of your cut should be level, while the top should slope at an angle of forty-five degrees.

Figure 37 illustrates a Box Cut partially completed. The axe blows are placed in series, very similar to those used when cutting a fallen log, i. e., the first blow on the near edge of your cut, with the heel of the axe left free of the cut; the second blow on the far edge of your cut with the top of the edge left free to help clear the axe. Then one or two strokes in the middle.

Figure 38 shows this method very clearly. Both ends have been cut away first. The middle has been left high, and the axe is now removing the middle chip.

Alternate your series: Three on the top of your cut and three on the bottom. Give your blade a twist on each stroke at the bottom of the cut to loosen the chip.



Fig. 37.—A box cut in a tree, partially completed.



Fig. 38.—Always remove the wood at both ends of cut first, leaving the middle wood high, so that the axe edge will never be entirely in solid wood.



Fig. 39.—Proper position at beginning of stroke. Notice distance of chopper from tree.



Fig. 40.—Proper position at completion of stroke. Chopper should not crowd his work.

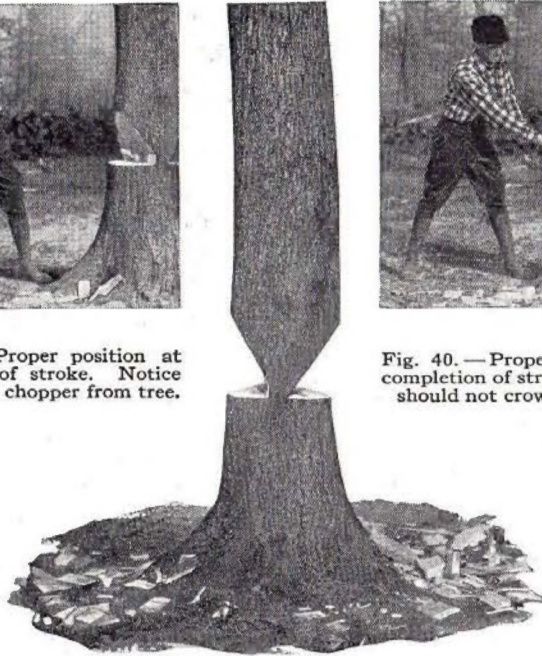


Fig. 41.—Front and rear box cuts almost completed. A few more strokes will topple it.

Use the Sidearm Stroke in cutting a tree. See Figure 39 for your position in relation to the trunk, and for the position of arms and axe at beginning of stroke. Figure 40 shows this stroke completed.

With your front notch completed, start a notch on the opposite side of the tree, cutting it in exactly the same way, and of the same height and depth.

Figure 41 shows a tree with both notches nearly completed. A few more strokes at the back notch will drop it.

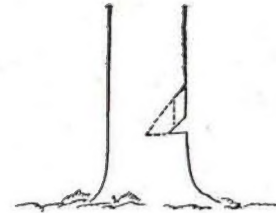


Fig. 42.—Chopping larger trees by cutting a small notch first; then breaking down the chip above this notch.

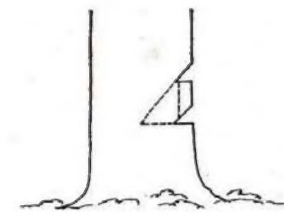


Fig. 43.—Another method for large trees. Two notches are cut, and the chip broken down between them.

If the tree has more than a slight lean, the front notch (the first one cut) should go deeper than half the thickness of the tree. This will prevent the tree from tearing or ripping when the back notch is cut. Some choppers believe that to cut the back notch slightly lower than the front helps to keep a leaning tree from ripping.

Chopping Larger Trees.—On larger trees it is not possible to make a Box Cut with one notch only, because the chip would be too large to throw out. Figure 42 illustrates how a smaller notch is cut first, and the chip cut down above your cut, as shown by the dotted line.

Another method of cutting larger trees is illustrated in Figure 43. Two separate notches are cut, the distance between them depending upon the thickness of the tree. The chip between the notches is then cut out as shown by the dotted line.

Felling a Tree Against the Lean.—It is possible to force a tree in the opposite direction from which it is leaning, if it is not too large. First, wait if possible for a wind in the direction you want to fell it. Make your

front Box Cut facing in this direction also, as explained before, to a depth of one third of the way through the tree. Then proceed with your Box Cut in the back half way through the trunk. You will then have about as much solid wood left as shown in Figure 44.

Next, wedge the tree as I am doing in Figure 44, this is called a "soldier," and is inserted, of course, in the back notch to force the tree over in the direction you want it to go.

To do this cut a heavy piece of wood and square it on both ends. Then with your axe, square up the top of your cut so the block will seat properly. It should fit in its space loosely, so that a wedge can be inserted underneath it as I have done. Now drive in the wedge as far as you can; see Figure 44. Return to your front Box Cut and cut through the balance of the tree.

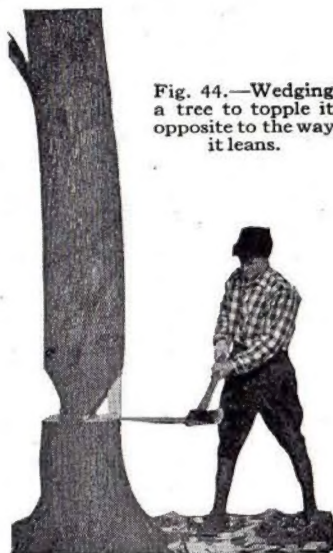


Fig. 44.—Wedging a tree to topple it opposite to the way it leans.

CHAPTER V

Playing Safe

I have often been asked—"Isn't the axe a dangerous tool?" And I invariably answer—"Any edge tool can become dangerous in the hands of a careless man."

In all my years of chopping I have received but one slight cut, and that in a careless moment where I carried the axe incorrectly because I had only a short distance to go.

The danger of an axe is largely a mental hazard. The user is fearful: he stands so far from his work that his axe is not under control, forgetting that if he misplaces a stroke, or hits a glancing blow, the axe will always come home to him.

Safety lies in learning to swing correctly and in placing your strokes accurately. Then stand within easy swinging distance and chop with confidence.

Of course, there is always the careless man who minimizes any risk, and chops more with abandon than with skill. In his hands the axe (or any edge tool) is dangerous.

Play safe! But do not fear your axe. Instead—master it.

Use precautions when your axe is not in use. In the woods, drive it into a stump, or, if a double-bit axe, lay it flat on the ground with the blade under or against a log.



Fig. 45.—Proper position as tree is falling. Note that axe is held away from body with edge pointing outward. Always watch the direction of fall.

Do not stand your axe up in woodshed or cellar. Lay it flat with the edge towards a wall.

When carrying an axe for any distance carry it on your shoulder with the edge pointing *outward*. For short distances carry the axe in your hand, always with the edge pointing away from you.

If you are carrying a double-bit axe, be especially careful.

If you fall, throw the axe from you, as quickly, and as far as you can.

Never chop a log or tree without making sure you have a clear circle to swing your axe. Remove all vines, brush, shrubbery, sticks, etc., that are within range. Look especially over your head for vines that may catch or deflect your axe. Stand close to your work. There is little danger of a misdirected blow injuring you. The danger lies in a glancing blow when the axe does not bite in. These false blows are usually due to the axe not being under control.

Never run from a falling tree. Just step a few feet to one side and watch the direction of its fall. Figure 45. If it changes its direction, a few feet more to one side brings you to a safe place.

Do not stand *behind* a falling tree. It may crash into another tree, which sometimes will force the butt over its own stump. See Figure 46. Always stand to one side.

Beware of "sailors." A sailor is a branch which has broken

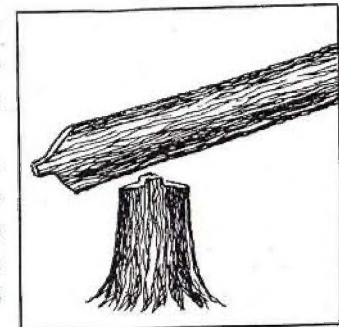


Fig. 46.—Do not stand behind a falling tree. It may ride over its own stump as illustrated.

off a falling tree when it crashes through a live tree. This branch remains suspended in the live tree until dislodged by a puff of wind or by its own swinging motion, when it crashes to the ground, perhaps weeks or months later. Always look overhead for sailors before chopping logs in the woods.

Beware of a rotten tree. There is no way to guide its fall.

The axe is a safe tool in the hands of the careful man. Accidents happen usually to the careless.